

### **AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An electromagnetic pump comprising:

a cylinder;

a moving member (10) being movably accommodated in said cylinder, said moving member (10) having a permanent magnet;

an air-core electromagnetic coil (50a, 50b) being fitted around said cylinder, said air-core electromagnetic coil coils reciprocally moving said moving member (10) ~~in the in an~~ axial direction when electricity is supplied to said coil coils;

pump chambers (30a, 30b) for sending a fluid, said pump chambers being formed in said cylinder;

an air-core detecting coil (53) for detecting reciprocating motion of said moving member (10) is fitted around said cylinder so as to be coaxial with said air-core electromagnetic coils (50a, 50b);

said air-core detecting coil (53) being fitted close to axial end faces of said air-core electromagnetic coils (50a, 50b), which are faced to each other; and

yokes (26a, 26b)~~are provided~~ being provided to axial end faces of said air-core detecting coil (53),~~and~~; and

an outer yoke (52) is provided being provided on an outer circumferential face thereof said air-core detecting coil (53),

wherein a magnetic circuit, through which magnetic flux generated from the moving member (10) passes, is constituted by said yokes (26a, 26b) and said outer yoke (52), and a position of said moving member (10) is detected by detecting an increase of the magnetic flux interlinking with said air-core detecting coil (53).

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The electromagnetic pump according to claim 1, wherein frequency of induced voltage of said air-core detecting coil (53) is twice as high as frequency of the reciprocating motion of said moving member (10).

5. (Currently Amended) The electromagnetic pump according to claim 1, wherein flow volume of said electromagnetic pump is detected ~~on the basis of the based on an~~ induced voltage detected by said air-core detecting coil (53).

6. (Currently Amended) The electromagnetic pump according to claim 1, wherein flow volume of said electromagnetic pump greater than a prescribed value or not is detected

~~on the basis of~~ based on a threshold value ~~of the~~ on an induced voltage detected by said air-core detecting coil (53).

7. (Currently Amended) The electromagnetic pump according to claim 1, wherein a normal or abnormal reciprocating motion of said moving member (10) is detected ~~on the basis of~~ based on a threshold value ~~of the~~ of an induced voltage detected by said air-core detecting coil (53).

8. (Currently Amended) The electromagnetic pump according to claim 1, wherein motion of said moving member (10) is controlled ~~on the basis of~~ based on a threshold value ~~of the~~ of an induced voltage detected by said air-core detecting coil (53).

9. (Currently Amended) The electromagnetic pump according to claim 1, wherein ~~the induced~~ an induced voltage detected ~~of said~~ by said air-core detecting coil (53) is detected in a detection range, in which variation of the induced voltage caused by magnetization of said air-core electromagnetic ~~coil~~ coils (50a, 50b) is small.